ſtance *included* in the Cheſt, ſo long laſts *Inſpiration*; but when the force of the *included* Air, by means of the Contraction of the Diaphragme and its preſſure, overcomes the ſtrength of the *inſpired* Air, then begins and ſo long laſts *Expiration*. So that, according to him, *Reſpiration* is nothing elſe, than a Reciprocation of the Air incloſed in the Cheſt, and an Alternate motion of the Lungs and the Diaphragme; whereby the external Air becomes the firſt origin of all the Animal motion.

As to the *Uſes* of Reſpiration, he eſteems, both from a certain Relation to be found in *Fontana*, and from the ſtructure, Motion and Scite of the Diaphragme, that there are other Uſes of it, than the Cooling of the Heart, the Fanning of the Blood, the Diſcharge of ſteams, the Conveyance of a Nitrous aliment, the Comminution and ſubduing of the Blood, and its intimate commixture with the Chyle, and the promotion of the Blood from one ventricle of the heart to the other; for all this, he ſaith, is perform'd by the help of the *Lungs*, (which is but *one* Organ of Reſpiration:) But then he would maintain, that by the other Inſtrument of Reſpiration, the *Diaphragme* and its Preſſion, there are effected ſuch other things, as are no leſs neceſſary to the preſervation of life, than the former; *viz.* The continual Preſſure of the Chyle out of the ſtomach into the inteſtins, and from thence by the Milky veins into the Glanduls of the Meſentery, and ſo further into the Chyliferous Channel; as alſo the Motion of the Blood out of the *Porta* into the Liver, and out of the Liver into the *Cava*; and that of the Gall into the Bladder of Gall, and thence into the common *ductus* and the Guts: perhaps alſo that thence proceeds the firſt Natural Inſtinct or Perception, exciting alſo the Animal motions.

Which being thus propoſed and deduced by him, he endeavours to ſatisfie the objections that may be made againſt this Hypotheſis; for which, and many other particulars, we refer to the Author himſelf.

NOTE,

AT the end of *p.* 2125. the *Reader* is deſired to add, to prevent all miſtakes, what the Author of that Letter ſignified *April* 21. 1671. to the *Publiſher*, ſince that was Printed, *viz.* That in a very ſharp Froſt the Bleeding is ſtop'd till the weather begins to change; but in a moderate Froſt, though it ſtop in the night, yet in the day-time, if the Sun ſhines out, the Trees will bleed, though the Froſt continue. What we ſaid in our Letter, Printed N°. 57. *p.* 1166. *l.* 45. that Cold did not promote but hinder bleeding; we find holds true, if the Cold be without Froſt.

Beſides, *p.* 2126. at the end of Mr. *Willoughby*'s Letter may be added, what he further imparted in the above ſaid Letter of *Apr.* 21. *viz.* That ſince his laſt, he had made tryal upon *Walnut* and *Sycamore* as to the tranſmitting of Water, and found, that the water runs through both; but nothing ſo faſt as thorough *Birch*.

ERRATA. In Numb. 69. *p.* 2091. *l.* 24. *r. and purſe.*
In this Numb. 70. *p.* 2128. *l.* 17. *r.* 9th *inſtant.* *p.* 2130. *l.* 3. *r. deſcent.*

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